



ERP01.003APC.TXT

SEQUENCE LISTING

<110> Schor, Seth Lawrence
Schor, Ana Marie

<120> Polypeptides, Polynucleotides, and Uses
Thereof

<130> ERP01.003APC

<140> US 09/581,651

<141> 2000-10-10

<150> PCT/GB98/03766

<151> 1998-12-15

<150> GB 9726539.1

<151> 1997-12-16

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<212> PRT

<213> Homo sapiens

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35 40 45
Arg Gln Ala Gln Gln Met Val Gln Pro Gln Ser Pro Val Ala Val Ser
50 55 60
Gln Ser Lys Pro Gly Cys Tyr Asp Asn Gly Lys His Tyr Gln Ile Asn
65 70 75 80
Gln Gln Trp Glu Arg Thr Tyr Leu Gly Asn Ala Leu Val Cys Thr Cys
85 90 95
Tyr Gly Gly Ser Arg Gly Phe Asn Cys Glu Ser Lys Pro Glu Ala Glu
100 105 110
Glu Thr Cys Phe Asp Lys Tyr Thr Gly Asn Thr Tyr Arg Val Gly Asp
115 120 125
Thr Tyr Glu Arg Pro Lys Asp Ser Met Ile Trp Asp Cys Thr Cys Ile
130 135 140
Gly Ala Gly Arg Gly Arg Ile Ser Cys Thr Ile Ala Asn Arg Cys His
145 150 155 160
Glu Gly Gly Gln Ser Tyr Lys Ile Gly Asp Thr Trp Arg Arg Pro His
165 170 175
Glu Thr Gly Gly Tyr Met Leu Glu Cys Val Cys Leu Gly Asn Gly Lys
180 185 190
Gly Glu Trp Thr Cys Lys Pro Ile Ala Glu Lys Cys Phe Asp His Ala
195 200 205
Ala Gly Thr Ser Tyr Val Val Gly Glu Thr Trp Glu Lys Pro Tyr Gln
210 215 220
Gly Trp Met Met Val Asp Cys Thr Cys Leu Gly Glu Gly Ser Gly Arg
225 230 235 240
Ile Thr Cys Thr Ser Arg Asn Arg Cys Asn Asp Gln Asp Thr Arg Thr
245 250 255
Ser Tyr Arg Ile Gly Asp Thr Trp Ser Lys Lys Asp Asn Arg Gly Asn

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260 265 270
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 275 280 285
 Glu Arg His Thr Ser Val Gln Thr Thr Ser Ser Gly Ser Gly Pro Phe
 290 295 300
 Thr Asp Val Arg Ala Ala Val Tyr Gln Pro Gln Pro His Pro Gln Pro
 305 310 315 320
 Pro Pro Tyr Gly His Cys Val Thr Asp Ser Gly Val Val Tyr Ser Val
 325 330 335
 Gly Met Gln Trp Leu Lys Thr Gln Gly Asn Lys Gln Met Leu Cys Thr
 340 345 350
 Cys Leu Gly Asn Gly Val Ser Cys Gln Glu Thr Ala Val Thr Gln Thr
 355 360 365
 Tyr Gly Gly Asn Ser Asn Gly Glu Pro Cys Val Leu Pro Phe Thr Tyr
 370 375 380
 Asn Asp Arg Thr Asp Ser Thr Thr Ser Asn Tyr Glu Gln Asp Gln Lys
 385 390 395 400
 Tyr Ser Phe Cys Thr Asp His Thr Val Leu Val Gln Thr Arg Gly Gly
 405 410 415
 Asn Ser Asn Gly Ala Leu Cys His Phe Pro Phe Leu Tyr Asn Asn His
 420 425 430
 Asn Tyr Thr Asp Cys Thr Ser Glu Gly Arg Arg Asp Asn Met Lys Trp
 435 440 445
 Cys Gly Thr Thr Gln Asn Tyr Asp Ala Asp Gln Lys Phe Gly Phe Cys
 450 455 460
 Pro Met Ala Ala His Glu Ile Cys Thr Thr Asn Glu Gly Val Met
 465 470 475 480
 Tyr Arg Ile Gly Asp Gln Trp Asp Lys Gln His Asp Met Gly His Met
 485 490 495
 Met Arg Cys Thr Cys Val Gly Asn Gly Arg Gly Glu Trp Thr Cys Ile
 500 505 510
 Ala Tyr Ser Gln Leu Arg Asp Gln Cys Ile Val Asp Asp Ile Thr Tyr
 515 520 525
 Asn Val Asn Asp Thr Phe His Lys Arg His Glu Glu Gly His Met Leu
 530 535 540
 Asn Cys Thr Cys Phe Gly Gln Gly Arg Gly Arg Trp Lys Cys Asp Pro
 545 550 555 560
 Val Asp Gln Cys Gln Asp Ser Glu Thr Gly Thr Phe Tyr Gln Ile Gly
 565 570 575
 Asp Ser Trp Glu Lys Tyr Val His Gly Val Arg Tyr Gln Cys Tyr Cys
 580 585 590
 Tyr Gly Arg Gly Ile Gly Glu Trp His Cys Gln Pro Leu Gln Thr Tyr
 595 600 605
 Pro Ser Ser Ser Gly Pro Val Glu Val Phe Ile Thr Glu Thr Pro Ser
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 Gln Pro Asn Ser His Pro Ile Gln Trp Asn Ala Pro Gln Pro Ser His
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 Asn Leu Gly Tyr
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 Lys Pro Gly Cys Tyr Asp Asn Gly Lys His Tyr Gln Ile Asn Gln Gln
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 Trp Glu Arg Thr Tyr Leu Gly Asn Ala Leu Val Cys Thr Cys Tyr Gly
 65 70 75 80
 Gly Ser Arg Gly Phe Asn Cys Glu Ser Lys Pro Glu Ala Glu Glu Thr
 85 90 95
 Cys Phe Asp Lys Tyr Thr Gly Asn Thr Tyr Arg Val Gly Asp Thr Tyr
 100 105 110
 Glu Arg Pro Lys Asp Ser Met Ile Trp Asp Cys Thr Cys Ile Gly Ala
 115 120 125
 Gly Arg Gly Arg Ile Ser Cys Thr Ile Ala Asn Arg Cys His Glu Gly
 130 135 140
 Gly Gln Ser Tyr Lys Ile Gly Asp Thr Trp Arg Arg Pro His Glu Thr
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 Gly Gly Tyr Met Leu Glu Cys Val Cys Leu Gly Asn Gly Lys Gly Glu
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 Trp Thr Cys Lys Pro Ile Ala Glu Lys Cys Phe Asp His Ala Ala Gly
 180 185 190
 Thr Ser Tyr Val Val Gly Glu Thr Trp Glu Lys Pro Tyr Gln Gly Trp
 195 200 205
 Met Met Val Asp Cys Thr Cys Leu Gly Glu Gly Ser Gly Arg Ile Thr
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 Cys Thr Ser Arg Asn Arg Cys Asn Asp Gln Asp Thr Arg Thr Ser Tyr
 225 230 235 240
 Arg Ile Gly Asp Thr Trp Ser Lys Lys Asp Asn Arg Gly Asn Leu Leu
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 Gln Cys Ile Cys Thr Gly Asn Gly Arg Gly Glu Trp Lys Cys Glu Arg
 260 265 270
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 275 280 285
 Val Arg Ala Ala Val Tyr Gln Pro Gln Pro His Pro Gln Pro Pro Pro
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 Tyr Gly His Cys Val Thr Asp Ser Gly Val Val Tyr Ser Val Gly Met
 305 310 315 320
 Gln Trp Leu Lys Thr Gln Gly Asn Lys Gln Met Leu Cys Thr Cys Leu
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 Gly Asn Gly Val Ser Cys Gln Glu Thr Ala Val Thr Gln Thr Tyr Gly
 340 345 350
 Gly Asn Ser Asn Gly Glu Pro Cys Val Leu Pro Phe Thr Tyr Asn Asp
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 Arg Thr Asp Ser Thr Thr Ser Asn Tyr Glu Gln Asp Gln Lys Tyr Ser
 370 375 380
 Phe Cys Thr Asp His Thr Val Leu Val Gln Thr Arg Gly Gly Asn Ser
 385 390 395 400
 Asn Gly Ala Leu Cys His Phe Pro Phe Leu Tyr Asn Asn His Asn Tyr
 405 410 415
 Thr Asp Cys Thr Ser Glu Gly Arg Arg Asp Asn Met Lys Trp Cys Gly
 420 425 430
 Thr Thr Gln Asn Tyr Asp Ala Asp Gln Lys Phe Gly Phe Cys Pro Met
 435 440 445
 Ala Ala His Glu Glu Ile Cys Thr Thr Asn Glu Gly Val Met Tyr Arg
 450 455 460
 Ile Gly Asp Gln Trp Asp Lys Gln His Asp Met Gly His Met Met Arg
 465 470 475 480
 Cys Thr Cys Val Gly Asn Gly Arg Gly Glu Trp Thr Cys Ile Ala Tyr
 485 490 495
 Ser Gln Leu Arg Asp Gln Cys Ile Val Asp Asp Ile Thr Tyr Asn Val
 500 505 510
 Asn Asp Thr Phe His Lys Arg His Glu Glu Gly His Met Leu Asn Cys
 515 520 525
 Thr Cys Phe Gly Gln Gly Arg Gly Arg Trp Lys Cys Asp Pro Val Asp

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530	Gln Cys Gln Asp Ser	535	Glu Thr Gly Thr Phe Tyr	540	Gln Ile Gly Asp Ser
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	Arg Gly Ile Gly Glu Trp His Cys	580	Gln Pro Leu Gln Thr Tyr	585	Pro Ser Gln Pro
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	Ser Ser Gly Pro Val Glu Val Phe	600	Ile Thr Glu Thr Pro Ser	605	Gln Pro
		610		615	
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atcaacagt	ggagcggacc	tacctaggca	atgcgttgg	ttgtacttgt	tatggaggaa	300
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gcatcacttg	cacttctaga	aatagatgca	acgatcagga	cacaaggaca	tcctatagaa	780
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<213> Homo sapiens

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Tyr Gly Gly Ser Arg
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<211> 20

<212> PRT

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 1 5 10 15
 Ala Leu Cys His
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<210> 9

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<212> PRT

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<212> PRT

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<213> Homo sapiens

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 Trp Lys Glu Ala
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<210> 15

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<212> PRT

<213> Homo sapiens

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 Phe Asp Phe Thr Thr Thr Ser Thr
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 35 40 45
 Arg Gln Ala Gln Gln Met Val Gln Pro Gln Ser Pro Val Ala Val Ser
 50 55 60
 Gln Ser Lys Pro Gly Cys Tyr Asp Asn Gly Lys His Tyr Gln Ile Asn
 65 70 75 80
 Gln Gln Trp Glu Arg Thr Tyr Leu Gly Asn Val Leu Val Cys Thr Cys
 85 90 95
 Tyr Gly Gly Ser Arg Gly Phe Asn Cys Glu Ser Lys Pro Glu Ala Glu
 100 105 110
 Glu Thr Cys Phe Asp Lys Tyr Thr Gly Asn Thr Tyr Arg Val Gly Asp
 115 120 125
 Thr Tyr Glu Arg Pro Lys Asp Ser Met Ile Trp Asp Cys Thr Cys Ile
 130 135 140
 Gly Ala Gly Arg Gly Arg Ile Ser Cys Thr Ile Ala Asn Arg Cys His
 145 150 155 160
 Glu Gly Gly Gln Ser Tyr Lys Ile Gly Asp Thr Trp Arg Arg Pro His
 165 170 175
 Glu Thr Gly Gly Tyr Met Leu Glu Cys Val Cys Leu Gly Asn Gly Lys
 180 185 190
 Gly Glu Trp Thr Cys Lys Pro Ile Ala Glu Lys Cys Phe Asp His Ala
 195 200 205
 Ala Gly Thr Ser Tyr Val Val Gly Glu Thr Trp Glu Lys Pro Tyr Gln
 210 215 220
 Gly Trp Met Met Val Asp Cys Thr Cys Leu Gly Glu Gly Ser Gly Arg
 225 230 235 240
 Ile Thr Cys Thr Ser Arg Asn Arg Cys Asn Asp Gln Asp Thr Arg Thr
 245 250 255
 Ser Tyr Arg Ile Gly Asp Thr Trp Ser Lys Lys Asp Asn Arg Gly Asn
 260 265 270
 Leu Leu Gln Cys Ile Cys Thr Gly Asn Gly Arg Gly Glu Trp Lys Cys
 275 280 285
 Glu Arg His Thr Ser Val Gln Thr Thr Ser Ser Gly Ser Gly Pro Phe
 290 295 300
 Thr Asp Val Arg Ala Ala Val Tyr Gln Pro Gln Pro His Pro Gln Pro
 305 310 315 320
 Pro Pro Tyr Gly His Cys Val Thr Asp Ser Gly Val Val Tyr Ser Val
 325 330 335
 Gly Met Gln Trp Leu Lys Thr Gln Gly Asn Lys Gln Met Leu Cys Thr
 340 345 350
 Cys Leu Gly Asn Gly Val Ser Cys Gln Glu Thr Ala Val Thr Gln Thr
 355 360 365
 Tyr Gly Gly Asn Ser Asn Gly Glu Pro Cys Val Leu Pro Phe Thr Tyr
 370 375 380
 Asn Gly Arg Thr Phe Tyr Ser Cys Thr Thr Glu Gly Arg Gln Asp Gly
 385 390 395 400
 His Leu Trp Cys Ser Thr Thr Ser Asn Tyr Glu Gln Asp Gln Lys Tyr
 405 410 415
 Ser Phe Cys Thr Asp His Thr Val Leu Val Gln Thr Gln Gly Gly Asn
 420 425 430
 Ser Asn Gly Ala Leu Cys His Phe Pro Phe Leu Tyr Asn Asn His Asn
 435 440 445
 Tyr Thr Asp Cys Thr Ser Glu Gly Arg Arg Asp Asn Met Lys Trp Cys
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 Gly Thr Thr Gln Asn Tyr Asp Ala Asp Gln Lys Phe Gly Phe Cys Pro
 465 470 475 480
 Met Ala Ala His Glu Glu Ile Cys Thr Thr Asn Glu Gly Val Met Tyr

				485					490					495	
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Tyr	Ser 530	Gln	Leu	Arg	Asp	Gln 535	Cys	Ile	Val	Asp	Asp 540	Ile	Thr	Tyr	Asn
Val 545	Asn	Asp	Thr	Phe	His 550	Lys	Arg	His	Glu	Glu 555	Gly	His	Met	Leu	Asn 560
Cys	Thr	Cys	Phe	Gly 565	Gln	Gly	Arg	Gly	Arg 570	Trp	Lys	Cys	Asp	Pro 575	Val
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Ser	Trp	Glu 595	Lys	Tyr	Val	His	Gly 600	Val	Arg	Tyr	Gln	Cys 605	Tyr	Cys	Tyr
Gly	Arg 610	Gly	Ile	Gly	Glu	Trp 615	His	Cys	Gln	Pro	Leu 620	Gln	Thr	Tyr	Pro
Ser 625	Ser	Ser	Gly	Pro	Val 630	Glu	Val	Phe	Ile	Thr 635	Glu	Thr	Pro	Ser	Gln 640
Pro	Asn	Ser	His	Pro 645	Ile	Gln	Trp	Asn	Ala 650	Pro	Gln	Pro	Ser	His 655	Ile
Ser	Lys	Tyr	Ile 660	Leu	Arg	Trp	Arg	Pro 665	Lys	Asn	Ser	Val	Gly 670	Arg	Trp
Lys	Glu	Ala 675	Thr	Ile	Pro	Gly	His 680	Leu	Asn	Ser	Tyr	Thr 685	Ile	Lys	Gly
Leu	Lys 690	Pro	Gly	Val	Val	Tyr 695	Glu	Gly	Gln	Leu	Ile 700	Ser	Ile	Gln	Gln
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			20					25					30			
Leu	Cys	Leu	Gly	Thr	Ala	Val	Pro	Ser	Thr	Gly	Ala	Ser	Lys	Ser	Lys	
		35					40					45				
Arg	Gln	Ala	Gln	Gln	Met	Val	Gln	Pro	Gln	Ser	Pro	Val	Ala	Val	Ser	
	50					55					60					
Gln	Ser	Lys	Pro	Gly	Cys	Tyr	Asp	Asn	Gly	Lys	His	Tyr	Gln	Ile	Asn	
65					70					75					80	
Gln	Gln	Trp	Glu	Arg	Thr	Tyr	Leu	Gly	Asn	Val	Leu	Val	Cys	Thr	Cys	
			85						90					95		
Tyr	Gly	Gly	Ser	Arg	Gly	Phe	Asn	Cys	Glu	Ser	Lys	Pro	Glu	Ala	Glu	
			100					105					110			
Glu	Thr	Cys	Phe	Asp	Lys	Tyr	Thr	Gly	Asn	Thr	Tyr	Arg	Val	Gly	Asp	
		115					120					125				
Thr	Tyr	Glu	Arg	Pro	Lys	Asp	Ser	Met	Ile	Trp	Asp	Cys	Thr	Cys	Ile	
	130					135					140					
Gly	Ala	Gly	Arg	Gly	Arg	Ile	Ser	Cys	Thr	Ile	Ala	Asn	Arg	Cys	His	
145					150					155					160	
Glu	Gly	Gly	Gln	Ser	Tyr	Lys	Ile	Gly	Asp	Thr	Trp	Arg	Arg	Pro	His	

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				165					170					175			
Glu	Thr	Gly	Gly	Tyr	Met	Leu	Glu	Cys	Val	Cys	Leu	Gly	Asn	Gly	Lys		
			180					185					190				
Gly	Glu	Trp	Thr	Cys	Lys	Pro	Ile	Ala	Glu	Lys	Cys	Phe	Asp	His	Ala		
		195					200					205					
Ala	Gly	Thr	Ser	Tyr	Val	Val	Gly	Glu	Thr	Trp	Glu	Lys	Pro	Tyr	Gln		
	210				215						220						
Gly	Trp	Met	Met	Val	Asp	Cys	Thr	Cys	Leu	Gly	Glu	Gly	Ser	Gly	Arg		
225					230					235					240		
Ile	Thr	Cys	Thr	Ser	Arg	Asn	Arg	Cys	Asn	Asp	Gln	Asp	Thr	Arg	Thr		
				245					250					255			
Ser	Tyr	Arg	Ile	Gly	Asp	Thr	Trp	Ser	Lys	Lys	Asp	Asn	Arg	Gly	Asn		
			260					265					270				
Leu	Leu	Gln	Cys	Ile	Cys	Thr	Gly	Asn	Gly	Arg	Gly	Glu	Trp	Lys	Cys		
		275					280					285					
Glu	Arg	His	Thr	Ser	Val	Gln	Thr	Thr	Ser	Ser	Gly	Ser	Gly	Pro	Phe		
	290					295					300						
Thr	Asp	Val	Arg	Ala	Ala	Val	Tyr	Gln	Pro	Gln	Pro	His	Pro	Gln	Pro		
305					310					315					320		
Pro	Pro	Tyr	Gly	His	Cys	Val	Thr	Asp	Ser	Gly	Val	Val	Tyr	Ser	Val		
				325					330					335			
Gly	Met	Gln	Trp	Leu	Lys	Thr	Gln	Gly	Asn	Lys	Gln	Met	Leu	Cys	Thr		
			340					345					350				
Cys	Leu	Gly	Asn	Gly	Val	Ser	Cys	Gln	Glu	Thr	Ala	Val	Thr	Gln	Thr		
		355					360					365					
Tyr	Gly	Gly	Asn	Ser	Asn	Gly	Glu	Pro	Cys	Val	Leu	Pro	Phe	Thr	Tyr		
	370					375					380						
Asn	Gly	Arg	Thr	Phe	Tyr	Ser	Cys	Thr	Thr	Glu	Gly	Arg	Gln	Asp	Gly		
385					390					395					400		
His	Leu	Trp	Cys	Ser	Thr	Thr	Ser	Asn	Tyr	Glu	Gln	Asp	Gln	Lys	Tyr		
				405					410					415			
Ser	Phe	Cys	Thr	Asp	His	Thr	Val	Leu	Val	Gln	Thr	Gln	Gly	Gly	Asn		
			420					425					430				
Ser	Asn	Gly	Ala	Leu	Cys	His	Phe	Pro	Phe	Leu	Tyr	Asn	Asn	His	Asn		
		435					440					445					
Tyr	Thr	Asp	Cys	Thr	Ser	Glu	Gly	Arg	Arg	Asp	Asn	Met	Lys	Trp	Cys		
	450					455					460						
Gly	Thr	Thr	Gln	Asn	Tyr	Asp	Ala	Asp	Gln	Lys	Phe	Gly	Phe	Cys	Pro		
465					470					475					480		
Met	Ala	Ala	His	Glu	Glu	Ile	Cys	Thr	Thr	Asn	Glu	Gly	Val	Met	Tyr		
				485					490					495			
Arg	Ile	Gly	Asp	Gln	Trp	Asp	Lys	Gln	His	Asp	Met	Gly	His	Met	Met		
			500					505					510				
Arg	Cys	Thr	Cys	Val	Gly	Asn	Gly	Arg	Gly	Glu	Trp	Thr	Cys	Tyr	Ala		
		515					520					525					
Tyr	Ser	Gln	Leu	Arg	Asp	Gln	Cys	Ile	Val	Asp	Asp	Ile	Thr	Tyr	Asn		
	530					535					540						
Val	Asn	Asp	Thr	Phe	His	Lys	Arg	His	Glu	Glu	Gly	His	Met	Leu	Asn		
545					550					555					560		
Cys	Thr	Cys	Phe	Gly	Gln	Gly	Arg	Gly	Arg	Trp	Lys	Cys	Asp	Pro	Val		
				565					570					575			
Asp	Gln	Cys	Gln	Asp	Ser	Glu	Thr	Gly	Thr	Phe	Tyr	Gln	Ile	Gly	Asp		
			580					585					590				
Ser	Trp	Glu	Lys	Tyr	Val	His	Gly	Val	Arg	Tyr	Gln	Cys	Tyr	Cys	Tyr		
	595						600					605					
Gly	Arg	Gly	Ile	Gly	Glu	Trp	His	Cys	Gln	Pro	Leu	Gln	Thr	Tyr	Pro		
	610					615					620						
Ser	Ser	Ser	Gly	Pro	Val	Glu	Val	Phe	Ile	Thr	Glu	Thr	Pro	Ser	Gln		
625					630					635					640		
Pro	Asn	Ser	His	Pro	Ile	Gln	Trp	Asn	Ala	Pro	Gln	Pro	Ser	His	Ile		
				645					650					655			
Ser	Lys	Tyr	Ile	Leu	Arg	Trp	Arg	Pro	Val	Ser	Ile	Pro	Pro	Arg	Asn		
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Leu Gly Tyr Xaa Val Ser Xaa Ser Gln Phe Xaa Trp Phe Leu Phe Phe
675 680 685
Pro Ala Phe Glu Pro Thr Thr Leu Ile Asn Tyr Ser Tyr Ser Ile Tyr
690 695 700
Tyr Ile Cys Leu Val Asn Lys Gln Tyr Val Val Asn Xaa Ile Asp
705 710 715

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Leu Gly Thr Ala Val Pro Ser Thr Gly Ala Ser Lys Ser Lys Arg
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Ser Lys Pro Gly
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Cys Tyr Asp Asn Gly Lys His Tyr Gln Ile Asn Gln Gln Trp Glu Arg
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Thr Tyr Leu Gly Asn Ala Leu Val Cys Thr Cys Tyr Gly Gly Ser Arg
20 25 30
Gly Phe Asn Cys Glu Ser Lys Pro Glu Ala Glu Glu Thr
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Cys Phe Asp His Ala Ala Gly Thr Ser Tyr Val Val Gly Glu Thr Trp
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His Thr Ser Val Gln Thr Thr Ser Ser Gly Ser Gly Pro Phe Thr Asp
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 Val Arg Ala Ala Val Tyr Gln Pro Gln Pro His Pro Gln Pro Pro Pro
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 Tyr Gly His
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 20 25 30
 Val Ser Cys Gln Glu
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 Tyr Glu Gln Asp Gln Lys Tyr Ser Phe Cys Thr Asp His
 35 40 45

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 Asp Ala Asp Gln Lys Phe Gly Phe Cys Pro Met Ala Ala His Glu Glu
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 Ile
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 Lys Gln His Asp Met Gly His Met Met Arg Cys Thr Cys Val Gly Asn
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 35 40 45

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 Glu Lys Tyr Val His Gly Val Arg Tyr Gln Cys Tyr Cys Tyr Gly Arg
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 35 40 45

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 Tyr Ile Leu Arg Trp Arg Pro
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Ser Tyr Ser Ile Tyr Tyr Ile Cys Leu Val Asn Lys Gln Tyr Val Val
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Ile Asp Leu
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Val Ser Ile Pro Pro Arg Asn Leu Gly Tyr
1 5 10